EN

PUROTAP
by ELYSATOR™

**Demineralised heating water**
perfect for every system

# PUROTAP leader

Installation
Function
Operation
Service


- **Maximum performance**
- **Replaceable cartridges**
- **Reliable monitoring**

Minerals and salts in water circuits for technical purposes cause corrosion and deposits.
PUROTAP filters the aggressive substances out of the water to enable trouble-free operation.

ELYSATOR
engineering water

**www.elysator.com**

# Content



Updates may be made without notice.
Web version supercedes print version.

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# The function

Heating and cooling systems use water as a medium for heat transfer. The water circulates from where the warm water is generated to the user and back. Even if the system always re-uses the same water, lime and aggressive materials enter the closed water system when first filling the system, which can damage modern components.

The filling apparatus filters lime and aggressive dissolved substances such as sulfate, nitrate and chloride out of the fill-up water. The device operates on the basis of a mixed bed ion exchanger and provides demineralised water that has been completely desalinated. Thus, damage caused by lime and corrosion can be effectively prevented in the heating system.

The filling apparatus is equipped with meters for monitoring pure water production in terms of qua-lity and quantity.

This method does not release any chemical additives into the water.

The device operates without an external power supply.

If the ion exchange capacity is exhausted, then the ion exchange resin can be easily replaced and disposed of with the household waste.

Protective measures:

Only trained personnel should use the filling apparatus.

Operating specifications must be adhered to according to this manual.

Local guidelines are to be followed for the connection between sanitary and heating systems. The device already has a return valve. In the DIN EN 1717 field of application, a pipe disconnector must also be installed before the fill-up station.

The system is not suitable for unmonitored, permanent connection under pressure. The valves in the input and output are to be kept closed and only to be opened for the duration of the system filling.

Even demineralised water contains dissolved gasses, including oxygen and carbon dioxide that can cause the beginning of a corrosion process. The gases are purged by heating the water, therefore we recommend carrying out a heating test run for the system as soon as possible after fill-up.

# According to the latest standards

Leading boiler manufacturers and component suppliers approve and recommend the procedure for purging make-up water via the ion exchanger.

The demineralised make-up water as a result of desalination also fulfills the requirements for heater fill-up water quality according to VDI guideline 2035 (Association of German Engineers), the SWKI guideline BT 102-01 (Swiss Heating and Air Conditioning Engineers) and the Ö-Norm H5195-1.

# Features of the device


**Battery compartment**
4 standard 1.5 V, C LR14 batteries enable operation without an external power supply.

**Locking mechanism**
Prevents the device being unintentionally opened during operation. Release by lifting the lever.

**Shut-off valve**
Plug and play: one simple movement is enough to start demineralisation.

**Anschlüsse**
Messing 3/4" Aussengewinde

**Information screen**
The information and control unit provides information about the incoming and outgoing water quality, as well as showing the throughput and volume. Various operating and monitoring modes.

**Warning & control**
The combined meter issues a visual and acoustic warning when the limit is reached. Optionally available accessories: wireless plug (receiver). Enables the control of external components such as pumps, solenoid valves, alarms, etc.

**High tech material**
The pressure vessel (max. 4 bar) is made from fibre reinforced mineral plastic, so it is light, unbreakable and long lasting. “swiss made” material design.

**Replaceable cartridge**
Through the patented flow of the resin beads, the replaceable cartridge increases the capacity of the ion exchange resin by up to 30 % and can be replaced in seconds.
The resin is quality controlled and certified for maximum productivity and reliability.

**Drain valve**
To reduce the weight for transportation and provide frost protection.
3/4" male thread.

# Connection variations system fill-up

This connection variation is suitable for directly filling heaters with demineralised water.

This connection variety is not suitable for area heating systems that can only be deaerated through purging. The delivery rate of the ion exchanger is not sufficient enough to purge air from a horizontal line. In these cases, we recommend fill-up with untreated water and subsequently demineralise via a cleaning system (see following page).

The apparatus contains a non-return valve. When the connections are turned, the untreated water cannot flow through the apparatus.

In the DIN EN 1717 field of application, a pipe disconnector must also be installed before the fill-up station. Follow the guidelines from the water supply company.

PUROTAP leader contains mechanisms for automatic stop. If the system fill-up is not constantly moni-tored, then a pressure-reducing valve needs to be installed so that the heating system is not damaged by over pressure at the end of fill-up.

PUROTAP leader may only be under pressure for the duration of filling.
Temp. max. 60 °C, pressure max. 4 bar.

**Optional wireless socket (see page 9)**

# Connection variations system cleaning

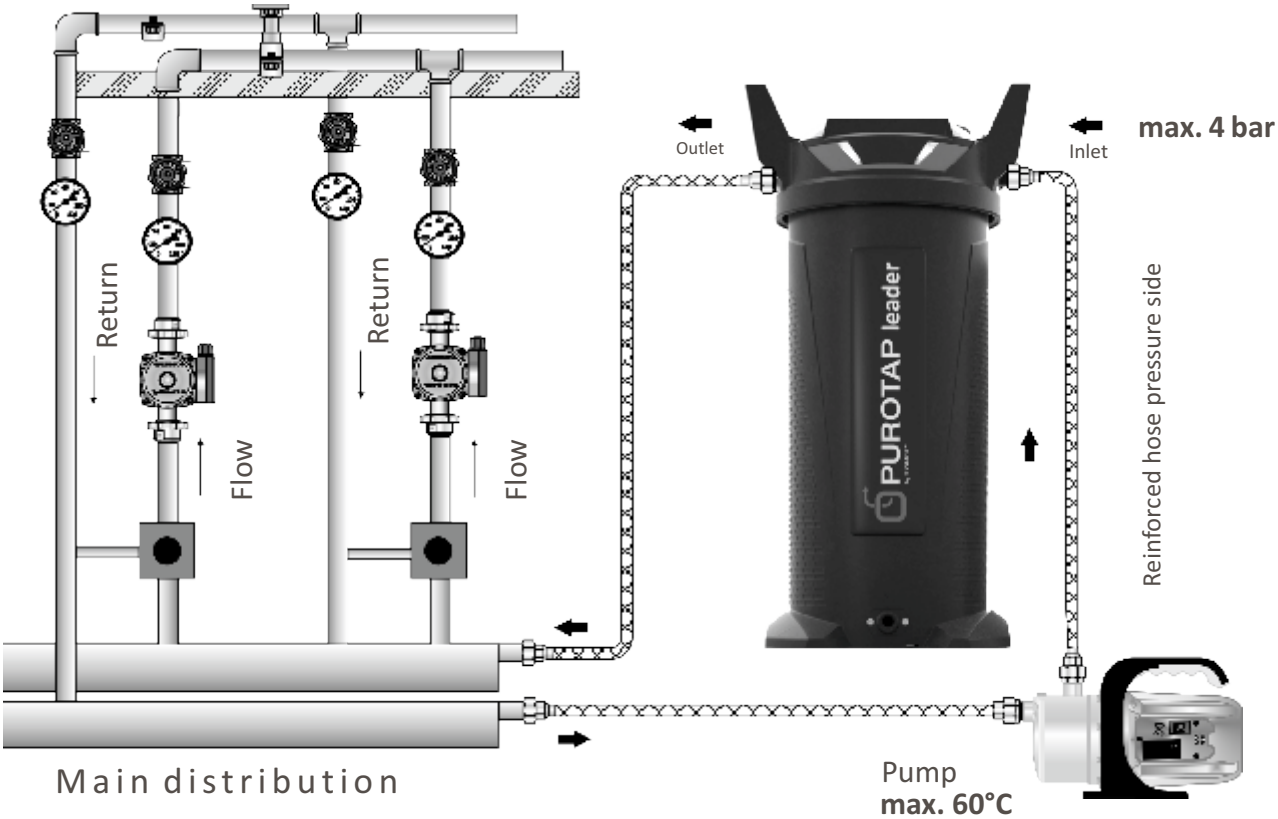
This procedure is also suitable for demineralising systems with too much salt content according to the boiler manufacturer's specifications or guidelines later.
Thereby, the ion exchanger is integrated into the heating system circulation with the help of a separate pump (e.g. jet pump, impeller pump, centrifugal pump) and two reinforced hoses. Hereby, it is of less importance which adapter is used; instead, it is more important that circulation pumps are operating and all valves are open and a good mixture of the system water is possible.

The apparatus meter indicates if the resin is exhausted. The system water demineralisation progress can only be determined during cleaning with a second meter and via sampling.
The apparatus contains a non-return valve. When the connections are turned, the untreated water cannot flow through the apparatus.
PUROTAP leaderis to be connected to the pressure side of the auxiliary pump.

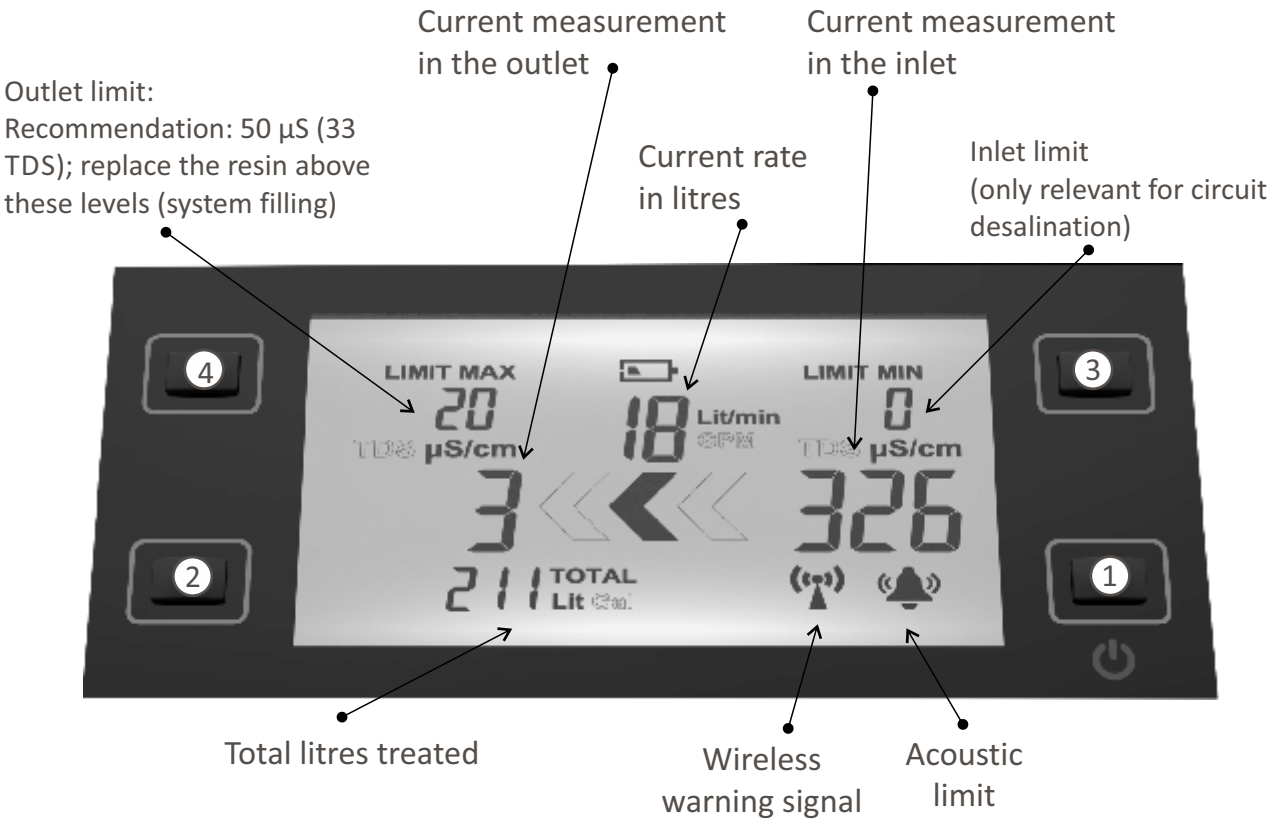
**Option: Wireless plug (see page 9)**

If this cleaning variation is conducted during heating operation, then the apparatus temperature may only reach a maximum of 60 °C for a short time. The apparatus is to be connected to the return line with the lowest temperature possible.

Hoses that are sufficiently pressure and temperature resistant are to be used (reinforced hoses). The ion exchanger may not be under pressure without monitoring.



# The information and control unit




① Switch on the control unit: press briefly once
Wireless signal on / alarm signal on / wireless signal off / alarm signal off: press briefly again
Switch off the control unit: press and hold for 3 seconds
All alarm functions are switched off following a restart. Also activates the backlight or interrupts an alarm. After 3 hours with no water throughput, the device switches off automatically.

② Tapping key 2 switches between the overall total and the running total (job) for water treatment. Pressing the key for 3 seconds deletes the total shown.

③ Each time this key is tapped, the limit for measurements at the PUROTAP leader inlet is increased by one interval, 10 µS or 2 TDS. Pressing the key for 3 seconds resets the limit to zero. Programming the limit at the inlet ensures that feedback is provided when the target value in the system water is reached (with system flushing).

④+③ Pressing keys 4 and 3 together for 2 seconds switches from EU to US units of measurement and vice versa.

④ Each time this key is tapped, the limit for measurements at the PUROTAP leader outlet is increased by one unit. Pressing the key for 3 seconds resets the limit to zero. Programming the limit at the outlet ensures that a warning is issued when the ion exchange resin is spent.

①+④ The following key combination activates a DEMO mode for the information unit:
The information unit must be switched off. Then press & hold key 1 and tap key 4. Release all keys and the DEMO mode simulates water treatment.
Tapping key 3 switches between DEMO modes for "System filling" and "System flushing".
The DEMO mode must not be activated when water treatment is running, as otherwise monitoring is not ensured.

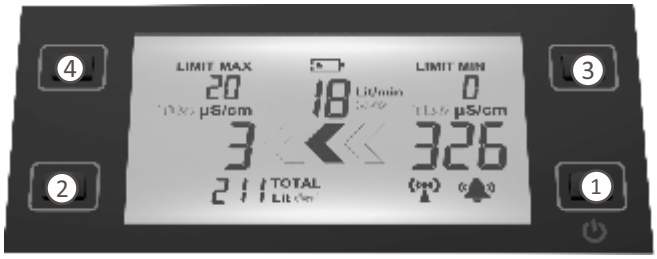
# Option: wireless pump control

## 1. Linking the devices

1. Wireless plug in socket: press green key (LED flashes)
2. PUROTAP leader: information centre switched OFF
3. Information centre (OFF): press & hold key 2,
   then press key 4. Release key 2 after 3 seconds.
4. Once successfully linked, the LED on the wireless plug will show constantly red. Otherwise repeat the process from the beginning.
5. The devices remain linked; one-off procedure.

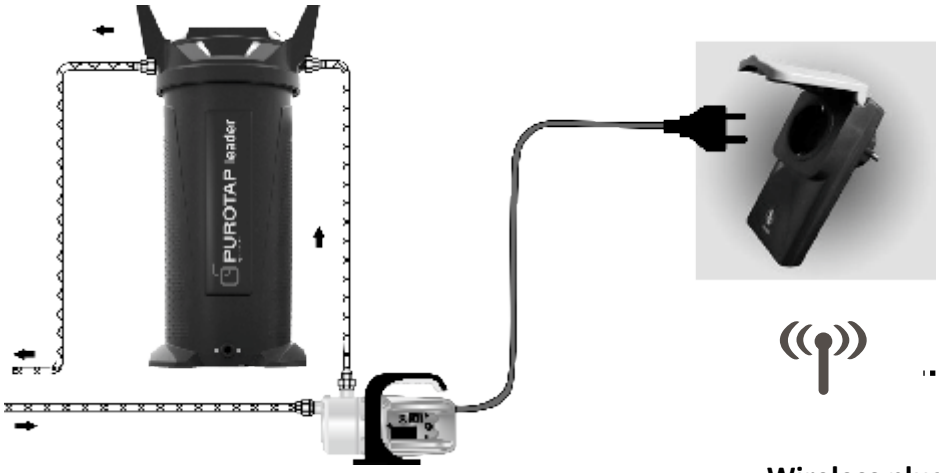
## 2. Activating the wireless signal

Tap key 4 repeatedly until the wireless signal appears at the bottom right of the screen.




## 3. Connecting the pumps

Wireless plug in socket; connect pump to wireless plug; pump runs when wireless signal on LED is activated/visible




## 4. How the control function works

1. Pumps runs when wireless signal on LED is visible
2. Pumps is idle when wireless signal on LED is not visible
3. Pump stops when limit in inlet or outlet is reached.

**Wireless plug**
Wireless transmitter for automatic shut-off of external devices, such as pumps and solenoid valves. 433.92 Mhz. With SEV 1011 plug type 12 (3-phase plug in accordance with Swiss standard)

# Calculating the capacity

Why the capacity calculation?

1. In order to know the amount of resin needed for the demineralisation of the system water.

2. In order to know the capacity of a resin fill-up that does not have to be monitored.

The capacity (range) of the ion exchanger resin is dependant on water hardness. It can be referred to from the adjacent table, or calculated with the capacity figure of the resin amount.

Example: with a water hardness of e.g. 20 °fH / 11 °dH, the capacity range of the resin amounts to
PUROTAP HIGHPOWER: 3'000 l
PUROTAP NEXION: 2'500 l.

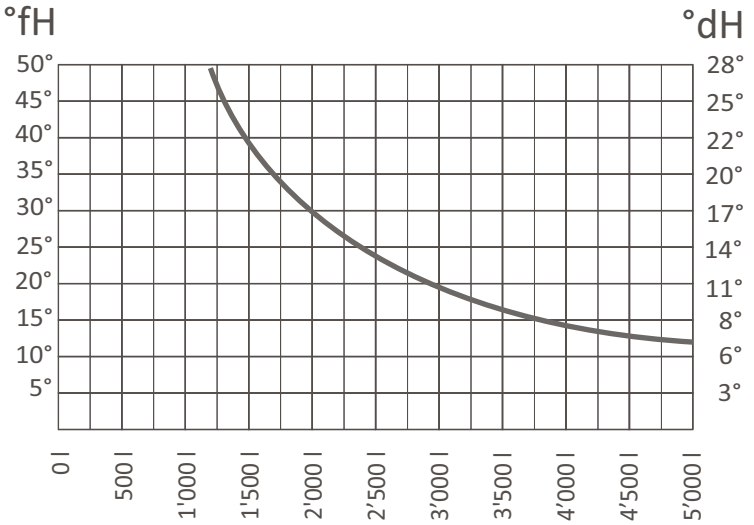

## PUROTAP HIGHPOWER

Capacity

60 $m^3$ à 1°fH

34 $m^3$ à 1 °dH

Litres of demineralised (completely desalinated) water per cartridge



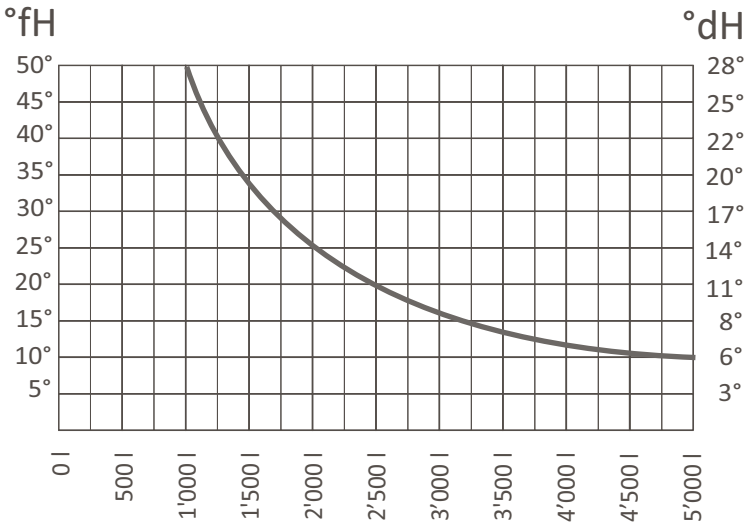

## PUROTAP NEXION

Capacity

50 $m^3$ à 1°fH

30 $m^3$ à 1 °dH

Litres of demineralised (completely desalinated) water per cartridge



# Replacing the ion exchange resin

1. Turn and pull the cover to remove.
2. Remove spent cartridge.
3. Insert new cartridge.
4. If necessary, lubricate the O-rings with silicone grease
5. Replace cover and turn to close. Check for damage and ensure the seals are seated correctly.

The spent cartridge can be disposed of as household waste.

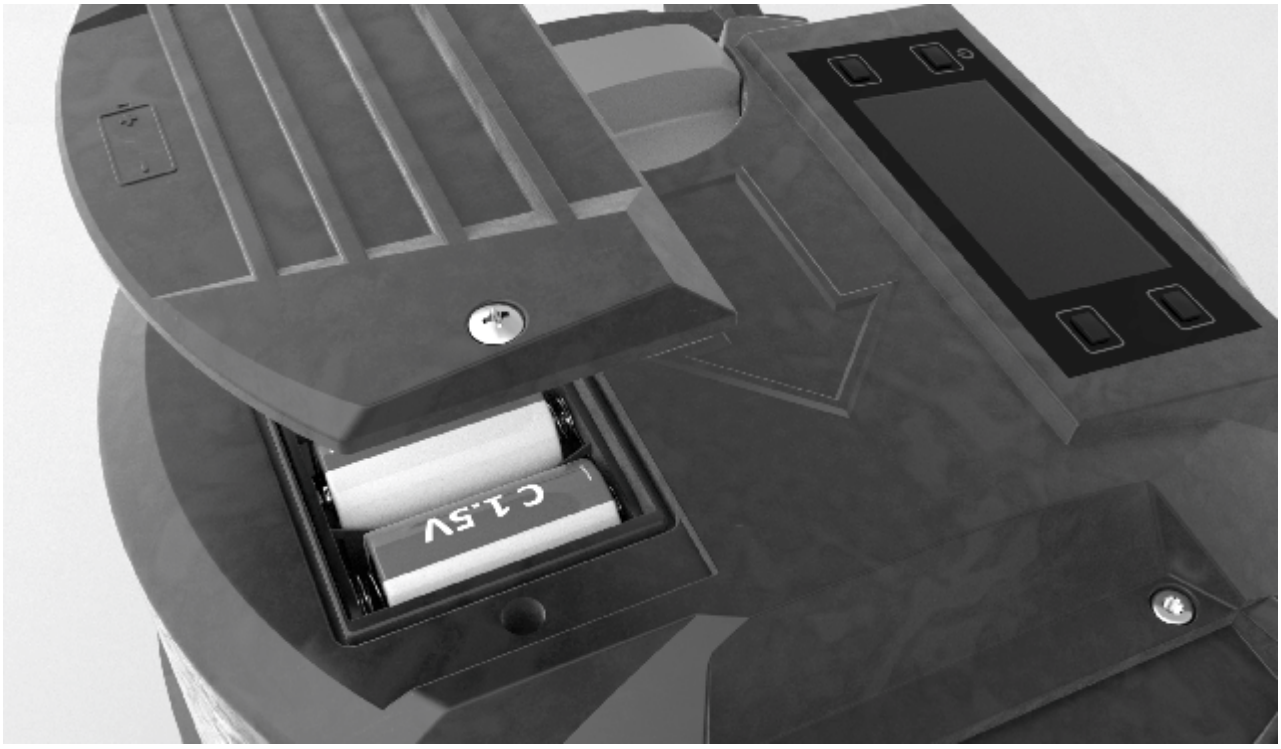

# Draining the water

To reduce the weight for transportation, we recommend draining the water after use. At colder times of year, it is ESSENTIAL to FULLY drain the water, as otherwise frost damage could occur.
The drain valve is located on the underside of the device.

# Replacing the batteries

Undo the 2 screws in the battery compartment, remove the cover and insert 4 new batteries, C LR14, 1.5 V. Check the seal of the battery compartment. Replace the cover and screws. Function check.

**4 x batteries C LR14, 1.5 V**




**Specification**

| | |
|---|---|
| Operating pressure | max. 4 bar |
| Temperature | max. 60 °C |
| Throughput | 20 l / min. |
| Connection | 3/4" |
| Weight | 9.5 kg (emty) + 15 kg (replaceable cartridge) |
| Height | 69 cm |
| Diameter | 30 cm |
| Power | 4 x batteries C LR14, 1.5 V |
| Manufacturer | ELYSATOR Switzerland |
| EAN number | EAN 7640169320064 |

| | | |
|---|---|---|
| Filling | HIGHPOWER replaceable cartridge | EAN 7640169321009 |
| | NEXION replaceable cartridge | EAN 7640169321023 |

PUROTAP leader is patented and swiss made.